



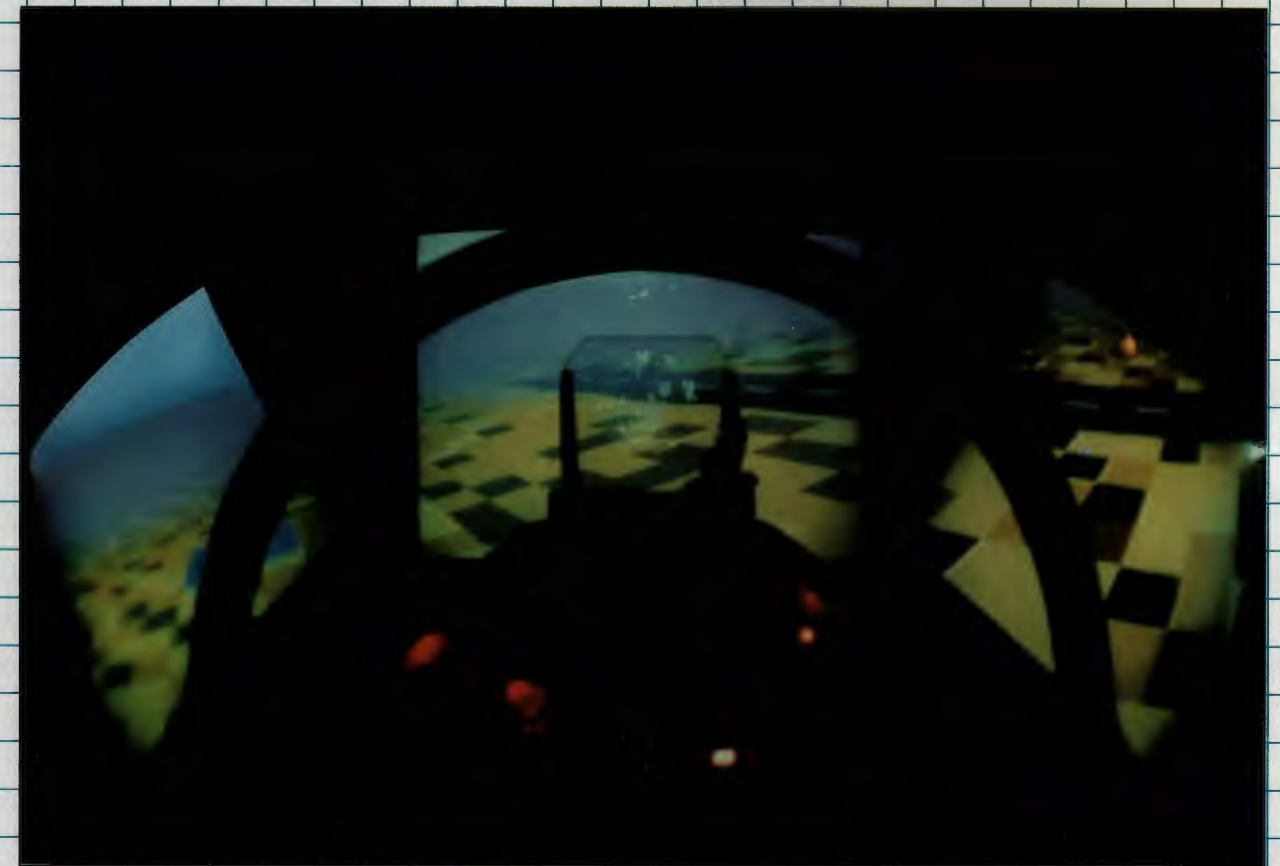
VISUAL SIMULATION

**A new low-cost visual for
military trainers/simulators**

Visual systems in pilot-training for military env



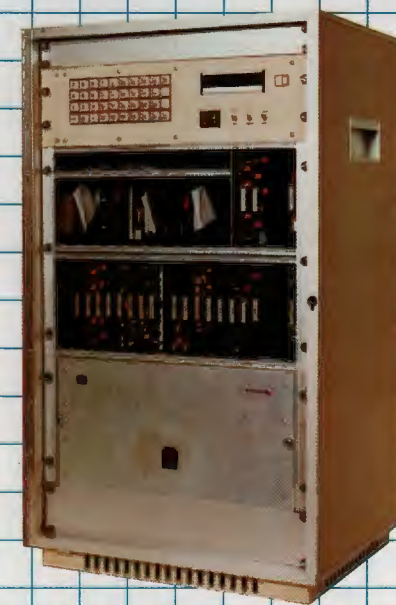
Fish-eye lens view of cockpit, showing wide-angle view from pilot position of runway, or complex target area. Note different terrain patterns and colour.



3-window collimated display fitted on fighter cockpit.

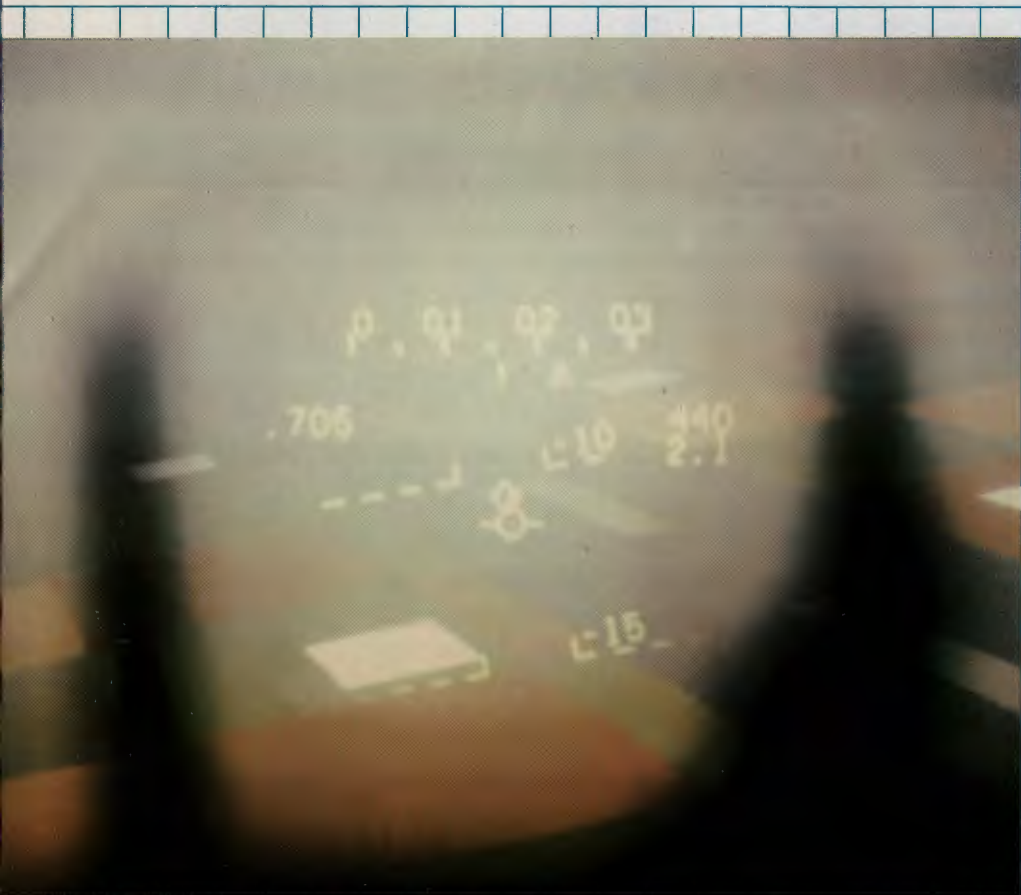


Front and rear view of single channel image generator. Multi-channel systems have more circuitry.

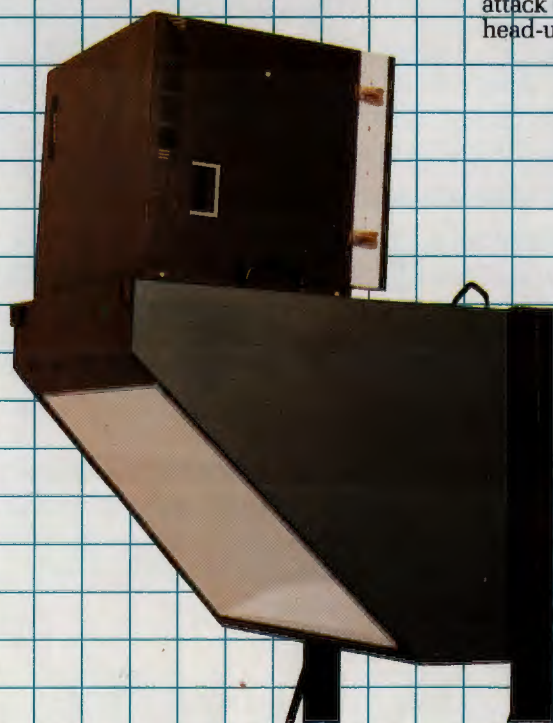


Dusk view, low-level attack on runway, with head-up display.

vironments.



Low-visibility, low-level attack on runway, with head-up display.



Display unit showing mirror collimation, with shadowmask CRT display, built for close adjacent mounting.

Photographs by courtesy of Dornier GmbH, Friedrichshafen, W. Germany, taken on Alpha-Jet research simulator.

Technical description and specification

Terrain:

6.4 by 6.4 N.M. (12 by 12 Km) basic, made up from an irregular array of rectangles. This can be re-scaled dynamically from 1 to 31 times basic size.

Four different terrain patterns user selectable.

Three sets of four terrain colours user selectable.

Haze blanks end of computed terrain to remove undesired effects, and assists sense of distance.

Runway and Targets:

A simple runway with centreline and VASI lights is provided. Size under user control, width 0-1000 feet (0-300m), length 0-10000 feet (0-3000m).

Four targets, with four colours user selectable, size separately adjustable in width and length 0-1000 ft (0-300m), position under user control, can move vis-a-vis terrain and/or other targets.

Targets and runway can be superimposed.

Cloud Base:

Adjustable 0-100% of actual height range. Same range for cloud top. This can be used for blanking view of ground while changing the terrain scale factor.

Visibility:

0-100% of maximum terrain range.

No limitation on Yaw, Pitch and Roll angles.

Speed to Mach 2.

Raster scan system, with high scan rate.

Daylight image generation.

Construction:

19" standard cabinet.

Power consumption:

A 3-channel system consumes less than 1500 watts, single-phase supply.

Multi-window capability in Azimuth and elevation.

Input link to simulator:

Normally, a bit-parallel, word-serial digital link, but purpose-built analog interfaces can be provided.

Options:

A fully digital high capability Navigation System can be integrated and interfaced to provide full navigation facilities.

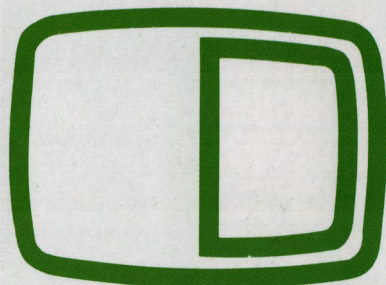
Display:

Infinity-collimated display, using spherical mirror and beam splitter, with high resolution 26 inch (67 cm) shadow mask tube.

Viewing Angles:	Horizontal	Vertical
Instantaneous	$\pm 22^\circ$	$+12^\circ - 15^\circ$
Maximum	$\pm 23^\circ$	$\pm 17^\circ$

Clearance from preferred pilot position to beam splitter, horizontally, 36"/920mm.

Multiple displays can be supplied for wide-angle systems.



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